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Myths and Factors that Influence Medicinal Plant Center Development on Mount Lawu, Java Island, Indonesia

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Traditional knowledge on medicinal plant cultivation and utilization have long been existing and a significant part of the culture of Indonesian people. Such traditional knowledge, however, is slowly disappearing which threatens the potentials of medicinal plants as well as the values of social capital of local communities. This research describes the myths and the factors influencing the development of a medicinal plant center on the slopes of Mount Lawu with the aim of reconnecting and sustaining the local wisdom and the values of social capital of the local community for their own benefits as well as for their environment. The research used qualitative method to gather detailed and holistic information about the myths that exist in the community, and quantitative method to discover the factors that influence the development of the medicinal plant center. The quantitative data analysis uses multiple linear regression. The research results show that the mythicizing of medicinal plants is a strategy used by the mountain community to transfer local knowledge to the next generation. Social capital, local wisdom, social quality, age, and education have a positive regression coefficient which means they have a significant effect on the development of the medicinal plant center.

Keywords: Community, local wisdom, medicinal plant center, myths, social capital, traditional knowledge.

INTRODUCTION

Throughout human history, traditional knowledge and cultural practices have played a vital role in shaping human societies and their interactions with the environment. This includes the use of traditional medicine, which has been practiced by communities worldwide for centuries." One of the cultural characteristics of societies in developing countries is that traditional elements are still dominant in people's daily living (Arias, 2021; Lyon, 2018). This condition is supported by the way people use the existing biodiversity in their environment that is bound closely to their culture. One example of this is the use of medicinal plants to cure specific ailments as well as to maintain overall health of family members both in urban and rural settings. Local cultures that are found in various communities have been proven to have the potential to support the needs of community members sans intervention or assistance. Local cultures, such as local knowledge systems and traditional beliefs, can be viewed as ecological wisdom that is beneficial as a control mechanism in environmental management (Inaotombi & Mahanta, 2018; Naping & Musywirah, 2019; Reniko et al., 2018; Wang et al., 2021; Wheeler & Root-Bernstein, 2020). Thus, the need for a cultural approach and the recognition of traditional values are becoming more important due to ecological balance considerations (Desing et al., 2020; Evans et al., 2020; Grogan, 2020; Pan et al., 2018). Global significance of medicinal plants. Primary health care, medicinal plants play a vital role in providing affordable and accessible healthcare options, especially for rural communities and areas underserved by modern healthcare services. A large portion of the world's population, especially in developing countries, still relies on medicinal plants as part of their traditional medicine systems to treat a variety of ailments. Economic

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opportunities, the cultivation and trade of medicinal plants offers significant economic opportunities. This sector can create jobs in agriculture, processing, and marketing, especially for rural communities (Mofokeng et al., 2022). The growing global demand for herbal products and natural-based medicines also drives local and international economic growth (Ndhlovu et al., 2020). Biodiversity conservation, the sustainable use and cultivation of medicinal plants can support biodiversity conservation efforts. Medicinal plants are often closely linked to traditional knowledge that has been passed down from generation to generation, so maintaining their use also means preserving cultural knowledge (Ssenku et al., 2022). This is important for maintaining natural ecosystems and mitigating the impacts of environmental change.

One such case is in India, as described by (Sen, 2018), where local cultural management that has the potential to protect the sacred gardens of the Indian community is a traditional way of conserving biodiversity. Various cultural rituals and religious celebrations are performed to protect plant varieties that may be referred to as a treasure house of species. Similarly, in China, (Wang et al., 2021) found that the methods and livelihoods of local rice farmers have been influenced by the formation and application of Indigenous Knowledge Systems, including knowledge about resource management of mountains, forests, water, and agricultural resources.

The above cases emphasize the importance of culture to the environment to solve its existing problems (Endraswara, 2021). These problems may either be related to a community's living environment, or to an environment associated with a community's belief in the supernatural or myth system. Joseph Campbell states that myth has four main functions, namely: the mystical function which interprets admiration for the universe; the cosmological function which explains the form of the universe; the sociological function which supports and validates certain social orders; and the pedagogical function which teaches how to live as human beings in any circumstances (Biju, 2018; Fowler, 2014; Smith, 2014). On this basis, myth and traditional knowledge can help ecological balance in the cultivation and utilization of medicinal plants.

Traditional knowledge about medicinal plants and their use in native culture is not only functional in conserving cultural traditions and biodiversity but also in health care and the development of medicines both now and in the future (Dapar & Alejandro, 2020; Eshete & Molla, 2021; Gogoi et al., 2019; Manna & Ghosh, 2021). Since ancient times, plants have been an important medicinal source (Grover et al., 2002) that is considered cheap and easily accessible. Medicinal plants have the potential to be developed further, to become a trade commodity that can supply distant market demand and improve the economy of areas rich in potential of medicinal plants (Adom, 2019; Ambu et al., 2020; Ozioma & Chinwe, 2019; Younis et al., 2018).

Indonesian society has long since recognized the medicinal values of various kinds of plants as well as the way to cultivate and process them in readily consumable forms. This knowledge has been passed down from generation to generation and has become a part of the culture (Ardan et al., 2014; Bahrudin & Zurohman, 2021; Jamun et al., 2020; Trisnaningsih et al., 2019). Shinwari et al. (2015) found that around 70% of village and marginal society depend on the hereditary culture of medicinal plant use for healing various diseases. In former times, herbal medicines were considered a cheap and easy way for curing illnesses. Indonesia has a wealth of medicinal plant species and local wisdom that have great potential, and originate from hundreds of different ethnic communities that inhabit various types of forest ecosystem covering an area of 119 million hectares. The number of medicinal plant species that have been identified so far is no fewer than 1260 different types (Zuhud et al., 1994). The utilization of traditional herbal medicine, known as *jamu*, has strong roots in Indonesian society. Traditional knowledge of formulas and types of medicinal plants is a national asset of immeasurable value. Likewise, many large traditional medicine industries in Indonesia have earned huge profits by developing the traditional knowledge of Indonesian communities (AZ-ZAHRA et al., 2021; Kuspraningrum et al., 2019).

Challenges in Medicinal Plant Conservation in Indonesia. First, Habitat loss and fragmentation. Deforestation: Indonesia is experiencing large-scale deforestation due to land clearing for oil palm plantations, intensive agriculture, and settlements. Many medicinal plant species that only grow in certain forests are now losing their natural habitat (Ikhsan et al., 2024). Land use change: the transformation of forest areas into industrial, mining, or infrastructure areas has fragmented natural ecosystems, isolated medicinal plant populations, and reduced genetic diversity (Firdhausi, 2024). Climate change: rising temperatures, shifting rainfall patterns, and extreme weather threaten medicinal plants that require specific environmental conditions. Endemic species that grow in highlands or certain areas are particularly vulnerable (Hadi et al., 2024).

Second, overexploitation. Uncontrolled harvesting: many medicinal plants are harvested directly from the wild to meet domestic and international market needs without adequate regulation. This has led to a drastic decline in the population of several plants, such as Eurycoma longifolia and Anredera cordifolia (Supriatna, 2021). Lack of cultivation: most medicinal plants still depend on wild sources. Ignorance of cultivation techniques or lack of interest in growing them sustainably exacerbates the risk of exploitation (Karim et al., 2024). High market demand: the herbal medicine and cosmetic industries continue to drive demand for medicinal plants, often without regard to sustainability (Munaeni et al.,

2022). Perkembangan Dan Manfaat Obat Herbal Sebagai Fitoterapi. Tohar Media.

Third, the loss of traditional knowledge. Urbanization: young people in rural areas often migrate to cities to find work, so that traditional medicinal practices based on medicinal plants are starting to be abandoned (Bowring, 2022). Modernization and western influence: the dominance of modern medicine and the pharmaceutical industry's campaign often sideline the value of traditional medicine (Maulana, 2021). This has led to a decline in appreciation for medicinal plants among the community. Lack of documentation: traditional knowledge about medicinal plants is often not well documented. If the older generation who hold this knowledge dies without passing it on, the information could be lost forever (Isrul et al., 2024).

This research was aimed: (1) to identify and document the myths and traditional beliefs associated with medicinal plants and their use in the Mount Lawu region; (2) to investigate the factors influencing the development and success of a medicinal plant center in the Mount Lawu region; (3) to assess the potential of a medicinal plant center to contribute to the conservation of biodiversity, the revitalization of traditional knowledge, and the economic development of local communities.

MATERIALS AND METHODS

The research was conducted in the mountainside community of Mount Lawu, in the region between Magetan Regency in East Java, for the following reasons: (1) the community is well-known to possess a wealth of local wisdom in the cultivation and utilization of medicinal plants; and (2) high biodiversity with medicinal values thrives in the community which make it a potential place to establish a center for the development of medicinal plants.

The research adopted a case study approach that used a combination of qualitative and quantitative methods in collecting data which was conducted between April and October 2021. Qualitative data for the research were obtained from in-depth interviews, observation, focus group discussions, document analysis, In-depth interviews, conducted to obtain detailed information from participants regarding perceptions, experiences, and views related to myths. Structured surveys: standardized questionnaires were distributed to all participants to collect relevant quantitative data. Focus Group Discussions, used to explore participants' collective views on the research issue. Direct observation, conducted to record real conditions and phenomena related to the research object in the field.

The informants were members of the community who were believed to have knowledge about the myths relevant to the study. They were selected following the five minimum requirements in selecting a good informant (Spradley, (year) cf (Farzi et al., 2022) namely: fully enculturated person, direct involvement, unfamiliar cultural atmosphere, sufficient time and non-analytical. There are 15 informants considered for qualitative data collection, which are representatives of government officials, farmers, farmer groups, community leaders, women farmer groups, Micro, Small and Medium Enterprises actors. The researchers used four types of triangulation described by (Miles et al., 2018; Zurba et al., 2019), namely: data triangulation, methodological triangulation, researcher triangulation, and theoretical triangulation. The analysis used with an interactive model of analysis that includes data reduction, data presentation, and the drawing of a conclusion or verification (Miles et al., 2018).

Quantitative data were collected through a survey questionnaire containing 118 questions using a 1-5 scoring system. A total of 105 participants were selected using a purposive sampling method based on the following criteria: (1) local context: participants were community members who were directly involved in activities related to the development of medicinal plants; (2) relevance of experience: individuals who had at least 2 years of experience in activities related to the development of medicinal plants); (3) demographic representation: participant selection took into account the distribution of age, gender, and region to ensure data diversity.

Validity tests are used to determine the feasibility of items in a list (construct) of questions in defining a variable (Dannels, 2018). The criteria for testing the validity test are: (1) if the product moment correlation coefficient exceeds 0.3; (2) if the product moment correlation coefficient > r-table; and (3) sig value ≤ α. Next, reliability is a measure of the stability and consistency of respondents in answering matters related to the question constructs which are the dimensions of a variable and are arranged in a questionnaire form (Edison, 2015). The reliability test criterion is said to be good if it has a Cronbach's Alpha value > 0.60.

Testing the validity and reliability of each question item in this study was carried out using the Minitab software. The results of the validity test are as follows.

Table 1. Validity and Reliability Test Results.

Question items	p-value	Cronbach Alpha
X1	0,000	0,7941
X2	0,000	0,7868
X3	0,000	0,8806

Source: Primary Data Analysis, 2021

Based on Table 1, it is known that the p-value of all questions from X1 to X3 is <0.05. This shows that the instrument meets the validity requirements so that it can be used in research. Cronbach's Alpha for all questions X1 to X3 > 0.60 means that the instrument in this study is reliable and can be said to be stable and consistent and can be used in research.

The variables measured were social capital, local wisdom, social quality, age, number of family members, and education. The degree of influence of the variables on the development of the medicinal plant center was analyzed using a method of multiple linear regression. The instrument for the data analysis was Minitab 18 software. This tool was used to generate regression coefficients that were BLUE (Best, Linear, Unbiased, Estimator), so that the parameters obtained were the best estimator.

The next stage was to perform a number of classical assumption tests, as follows. A data normality test of a regression model was used to test whether the residual value produced from the regression was distributed normally or not. A heteroscedasticity test was done to test whether or not there was a discrepancy in variance between one residual of observation and another in a single regression model. A multicollinearity test, according to (Ghozali, 2013), aims to test whether a regression model finds any correlation between the free (independent) variables. To measure the extent of the ability of a model to explain the free or dependent variables, a Determination of Coefficient Test (R^2) was carried out. This was followed by an F test to test whether or not together the free variables had an effect on the dependent variable.

RESULTS

***Myths associated with medicinal plants in the Lawu mountainside community*:** Located on the Island of Java, Mount Lawu is a popular destination for mountain climbing and hiking activities and is also widely known for its mystic associations. The various myths have ffected the mindset of the community as well as visitors. Some of these myths have positively sparked the curiosity of tourists which led to an increase in the number of visitors daily. This condition has also encouraged the local community of Mount Lawu to continue its efforts to preserve the myths associated with the medicinal plants grown in this area.

Among the the plants cultivated and used in the Lawu mountainside community that have myths associated with them include *dewandaru* (Suriname cherry), moringa, jasmine, betel, sapodilla, *jarak* (jatropha curcas) and *purwoceng* (pimpinella alpinna). The community people believe that having a *dewandaru* (Suriname cherry) fruit or leaf fall on them will bring wealth, success, and happiness. They also believe that the *dewandaru* plant can prevent chronic diseases, such as arthritis, heart disease, atherosclerosis, stroke, hypertension, stomach ulcer, Alzheimer's, Parkinson's, cancer, and diabetes, and also prevent premature aging caused by oxidation damage. The antioxidant properties of the *dewandaru* fruit have been proven in a number of studies. The *dewandaru* fruit has been found to contain flavonoids that are the main compound in the composition of antioxidants (Martiani et al., 2017). Another study confirms the presence of a partial structure thought likely to be 5,7,3',4'-tetra hydroxyflavone or quercetin. This research also finds evidence of the depth of meaning of QS. A Nahl verse 11" With (the rain) He causes to grow for you plants, olives, dates, grapes and all kinds of fruits. Indeed, in that there is truly a sign (of Allah's greatness) for those who think" (Faizi & Marhayuni, 2022).

Moringa (*Moringa oleifera L.)* leaves are often used by the community people to bathe a corpse. Although the reasons are unknown, moringa leaves are used in rituals to ward off black magic or bad spirits. The local people also believe that moringa leaves contain a multitude of good properties to promote good health, such as fighting diabetes, lowering cholesterol and reducing uric acid. Moringa leaves are often consumed in a clear vegetable broth to reap these benefits. A study by (Putra et al., 2016) shows that ethanol extract from moringa leaves contains alkaloids, flavonoids, phenolates, triterpenoids/steroids, and tannins.

Many Indonesian people commonly sprinkle jasmine flowers on the top of a fresh grave site with the belief that the smell of jasmine at night is an indication of the presence of spirits. Aside from its mystical connotations, the jasmine flower contains a wealth of phytochemical properties that promote good health, such as lowering blood sugar, fighting cholesterol, and curing inflammation of the intestine and kidneys. The most common way to consume jasmine is in unsweetened tea. The phytochemicals contained in jasmine flower extract have been made into a local commodity that has potential as an anti-larvacide (Hidayah et al., 2019). Tests have shown that the extract of ethyl acetate from jasmine flowers also has the ability to obstruct the growth of Staphylococcus epidermidis (Wahyu et al., 2016).

Since ancient times, betel leaves have been recognized for their ability to treat a person who is possessed by a demon. In addition to this use, betel leaves also contain various natural properties that have led to their use in traditional medicine for curing a variety of minor and more serious illnesses. The residual water from boiling the leaves can be drunk to treat asthma, sore throat, toothache, and dengue fever. Results of research by (Pratiwi & Muderawan, 2016) show that an extract of green betel leaves contains 31 components, the main ones being eugenol (25.03%); 2,5-dimethylbenzoic acid (12.08%); decahydro-4a-methyl-1-methylene naphthalene (7.18%); 1,2,3,4,4a,5,6,8a-octahydro-7-methyl naphthalene (8.36%); and 1,2,3,4,4a,5,6,8a-octahydro-4a-methylnaphthalene (13.43%). These results show that the majority of active components in green betel extract are phenolic compounds with antibacterial properties. A study by (Widiyastuti et al., 2016) shows that a 15% concentration of betel leaf extract is optimal for accelerating the wound healing process.

According to Javanese myth, the sapodilla plant is widely believed to bring good fortune to anyone who plants it in front of their house. The sapodilla fruit is thought to contain a high concentration of various minerals and multivitamins so that

regular consumption is beneficial for maintaining good physical health. The benefits of consuming sapodilla include preventing osteoporosis, preventing bowel cancer, preventing premature aging, and improving the digestion. The research results of Arditya (2020) show that sapodilla extract can prevent bacterial growth, with a concentration of 100% producing an inhibition zone of 17.60 mm, a 75% concentration producing 16.50 mm, a 50% concentration producing 15.70 mm, and a 25% concentration producing 13.90 mm. The *jarak* (jatropha curcas) and *purwoceng* (pimpinella alpinna) plants both have stems that resemble the male genitalia. According to myth, these plants contain properties that can enlarge the male genitals and increase stamina. According to the research of (Setyaningsih et al., 2013), the results of antioxidant testing show that the highest antioxidant activity is found in a sample of methanol extract from *jarak pagar* seeds with an inhibition percentage of 93.40% on the free radical DPPH. *Purwoceng* (pimpinella alpinna) has been described as a legendary plant that is used as a tonic to increase the sexual potency of Javanese kings and other royalty, and this is not entirely a myth, as proven by a number of studies. Pimpinella alpinna also has an antiproliferative and cytotoxic effect on A549 cells in lung cancer, and induces apoptosis through a change in the apoptosis pathway by reducing the expression of Rb and bcl-2 and increasing p53 and caspase-9 (Ihsan et al., 2016). Extracts of betel nut, *purwoceng*, and ginseng possess a high content of flavonoids. The creation of nanoparticles using a polimerization technique on a compound of betel nut, *purwoceng*, and Javanese ginseng, using PLGA and PVA, can be used effectively (SIDIQ et al., 2018).

***Respondents' Characteristics*:** The respondents' identities included age, gender, marital status, education, number of family members that will influence the success of the community's activities in developing medicinal plants, both in terms of preservation and development (Table 2).

According to the Central Bureau of Statistics of the Republic of Indonesia, age group can be classified into three groups, namely below the productive age (<15 years), productive (15-64 years), and over the productive age (>64 years). Thus, 98% of respondents belonged to the productive age group who can actively participate to develop a better and more optimum medicinal plant center because they still have a high capacity to work and manage the plants, as well as the motivation to develop further. Female respondents (61%) were more than their male counterparts (39%). Traditionally, women are more involved in medicinal plant cultivation, processing and utilization which can be considered as an advantage in the development of the medicinal plant center. The majority of the respondents (90%) were married. Most of them have 3-5 family members. This family composition can be helpful for developing medicinal plant farms because it reduces the need to use outside labor. However, in terms of the economic aspect, a family with a large number of members influences the family's expenditure, which in turn affects the allocation of costs for developing their medicinal plants. About 55% of the respondents graduated from high school or a similar level of education which can be considered as relatively high for the community. Education level will influence a person's outlook and the way a person thinks and acts in making decisions related to the development of a medicinal plant center. A higher level of education will make a person more inclined to be open to innovation in their surrounding environment.

Table 2. Respondent characteristics.

Characteristics	Category	No.	Percent
Age	Productive	103	98
	Unproductive	2	2
Gender	Male	41	39
	Female	64	61
Marital status	Married	95	90
	Unmarried	10	10
Number of family members	1 person	1	1
	2 people	8	8
	3 people	33	31
	4 people	35	33
	5 people	18	17
	6 people	6	6
	7 people	4	4
Education	No formal education	0	0
	Primary School	12	11
	Middle School	22	21
	High School	58	55
	Diploma/Degree	13	13

Data source: Analysis of Primary Data, 2021

***Factors that influence the medicinal plant center development*:** The variables considered to influence the development of a medicinal plant center on the slopes of Mount Lawu in Karanganyar and Magetan Regencies are social capital, local wisdom, social quality, age, number of family members, and education. The relationships between these variables and the development of the medicinal plant center are shown using a multiple linear regression model, as follows:

$$Y = 20.21 + 0.0557\ X_1 + 0.0821\ X_2 + 0.0969\ X_3 + 0.1343\ X_4 + 0.470\ X_5 + 8.669\ X_6$$

Note:
Y = Medicinal plant center development
a = Constant (Value Y if X_1, X_2, ... X_n)
b = Regression coefficient (Value of increase or decrease)
X1 = Social capital
X2 = Local wisdom
X3 = Social quality
X4 = Age
X5 = Number of family members
X6 = Education

***Results of classical assumption tests*:** Normality Test. A normality test of data in a regression model is used to test whether the residual value resulting from the regression is distributed normally or not. This test is useful in the initial stage of a data analysis method. The purpose of a normality test is to find whether in a regression model the confounding variable or residual has normal distribution. According to Ghozali (2013), a normality test can be done using the Kolmogorov-Smirnov (KS) test. The results of the normality test with Kolmogorov-Smirnov, as shown in figure 1, reveals that the p-value is >0.150 where this value is greater than alpha ($\alpha = 0.05$) so it is not significant. Therefore, the residual value produced from the regression analysis is distributed normally.

Heteroscedasticity Test. The purpose of a Heteroscedasticity Test is to test whether or not there is any difference in variance of the residual of one observation and another in a regression model. If the variance of the residual from one observation to another remains the same, it is known as homoscedasticity and if it is different it is referred to as heteroscedasticity. The presence or absence of heteroscedasticity is detected by looking at the patterns of dots in the regression scatterplots between the variable Y prediction (Fits) and the residual.

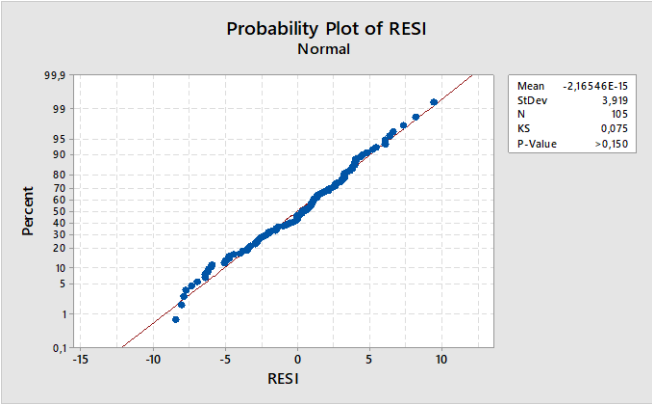

Figure 1. Normality Test.

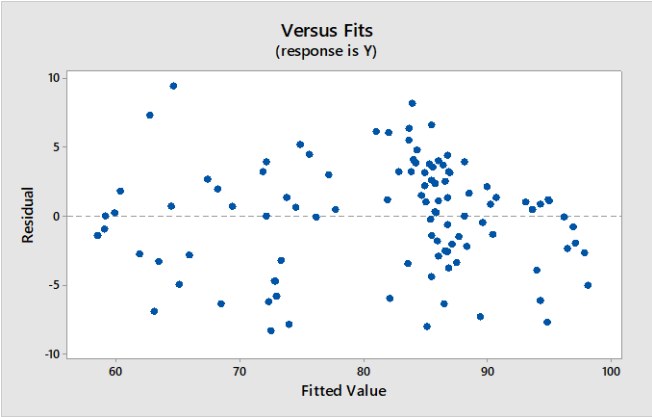

Figure 2. Heteroscedasticity Test.

Based on the scatterplots as shown in Figure 2 the plots are spread evenly above and below axis 0 without forming a particular pattern. This indicates that there is no heteroscedasticity in the regression model, so the regression model is fit to be used for prediction. Multicollinearity Test. According to Ghozali (2013), the purpose of a multicollinearity test is to test whether a regression model finds any correlation between the free (independent) variables. A good regression model should not have any correlation between the independent variables. The method used to detect whether or not any multicollinearity exists is the Variance Inflation Factors (VIF) test using Minitab 18. The limit of VIF is 10. If the VIF value is ≤ 10, it means there is no multicollinearity in the regression model.

Table 3. Multicollinearity Test Results.

Term	Coef	SE Coef	VIF
Constant	20.210	4.8900	
X1 (social capital)	0.0557	0.0162	1.84
X2 (local wisdom)	0.0821	0.0322	2.49
X3 (social quality)	0.0969	0.0446	1.96
X4 (age)	0.1343	0.0459	1.29
X5 (number of family members)	0.4700	0.3300	1.01
X6 (education)	8.6690	0.8520	3.20

Source: Analysis of Primary Data, 2021

Based on the table above, it can be seen that the VIF values of all variables are ≤ 10. This indicates that there is no correlation between the free variables so the regression model is free from multicollinearity.

***Statistical test results*:** Determination Coefficient Test (R^2). A determination coefficient test is used to measure how far a model is able to explain the free or dependent variables, which in this case are social capital, local wisdom, social quality, age, number of family members, and education. The degree of influence of these variables is indicated by the determination coefficient R Square and is stated in the unit of percentage. The results of the determination analysis can be seen in the table below.

Table 4. Determination Coefficient Test.

S	R-sq	R-sq(adj)	R-sq(pred)
4.03684	87.15%	86.36%	85.04%

Source: Analysis of Primary Data, 2021

From this table, it can be seen that the R Square value is 87.15%. R Square value that is close to one means that the independent variables provide almost all the information required to predict the dependent variable(s). Based on the R Square value obtained, the variation of independent variables used in this model, which are social capital, local wisdom, social quality, age, number of family members, and education, can explain 87.15% of the variation of the dependent variable (development of a medicinal plant center).

The remaining 12.85% is influenced by other variables that are not included in the model.

***F Test*:** The F Test is used to test whether the independent variables together influence the dependent variable. In this research, the F test was performed to find whether social capital, local wisdom, social quality, age, number of family members, and education together have an effect on the development of the medicinal plant center. The results of the F test can be seen in the table below wherein the probability value is 0.000, which is smaller than α (α = 0.05).

Table 5. Results of F Test.

Source	DF	Adj MS	F-Value	P-Value
Regression	6	1804.70	110.74	0.000
Error	98	16.30		
Total	104			

Source: Analysis of Primary Data, 2021

This means that H_0 is rejected and H_a is accepted and that the independent variables used in this research, namely social capital, local wisdom, social quality, age, number of family members, and education, together have a significant effect on the dependent variable, which is the development of the medicinal plant center.

***t-Test*:** The statistical t-test is used to discover the extent to which the individual influence of the independent variables can explain the dependent variables. In this research, the t-test shows how far the independent variables (social capital, local wisdom, social quality, age, number of family members, and education) individually explain the development of the medicinal plant center, as the dependent variable. The results of the t-test can be seen in Table 6.

Table 6. T-Test Results.

Term	Coef	SE Coef	t-value	P-value	VIF
Constant	20.210	4.8900	4.13	0.000	
X1 (social capital)	0.0557	0.0162	3.44	0.001	1.84
X2 (local wisdom)	0.0821	0.0322	2.55	0.012	2.49
X3 (social quality)	0.0969	0.0446	2.17	0.032	1.96
X4 (age)	0.1343	0.0459	2.92	0.004	1.29
X5 (number of family members)	0.4700	0.3300	1.42	0.158	1.01
X6 (education)	8.6690	0.8520	10.18	0.000	3.20

Source: Analysis of Primary Data, 2021

DISCUSSION

***Social capital variable*:** Based on the results of the regression analysis, the significance value (Sig.) of the social capital variable (X_1) is $0.001 < \alpha = 0.05$. Thus, the H_0 is rejected and H_1 is accepted, which means that individually, social capital (X_1) has a significant effect on the development of the medicinal plant center (Y). The social capital variable (X_1) has a positive regression coefficient value of 0.0557, which means that every 1% increase in social capital will increase the medicinal plant center development by 0.0557%. Social capital includes obligations and expectations, information channels and social norms; social capital comprises beliefs, values and norms, social networks, solidarity, mutual assistance, reciprocity, cooperation, cohesiveness, tolerance, loyalty, and altruism (Herrero & Hughes, 2019; Hoffmann & Dufur, 2018; Rayamajhee & Bohara, 2021). The values of social capital in the local community can be seen in people's ability to work together to deal with all the problems they face from the cultivation of medicinal plants to the processing and marketing of the plants. This is in line with the research of (Hatu et al., 2019; Rismaningtyas et al., 2018; Sugiarto & Suryanto, 2014; Syahriar & Darwanto, 2015) where in all the elements of social capital have formed a positive correlation for improving the capacity of community empowerment. The belief of the community in the efficacy, properties, and safety of medicinal plants will support the development of the medicinal plant center to produce products that are more beneficial and can increase people's income. The values and norms that exist and are adhered to in the community, together with an attitude of mutual assistance, cooperation, reciprocity, solidarity, and loyalty, will help promote the development of the medicinal plant center, because its development needs the positive values of the community in order for its implementation to run properly, as well as the cooperation and mutual support between members of the community. Good cohesiveness and altruism in the community will create a supportive environment for development (Fonseca et al., 2019; Jennings & Bamkole, 2019; Steiner & Teasdale, 2019), and this is also the case in this research, which finds that social cohesion strongly influences the successful development of the medicinal plant center because of the relationships between people who all belong to the same group. This gives them a sense of belonging which in turn increases their commitment to the development of the medicinal plant center. Altruism will also support the development of the medicinal plant center because people will have concern for each other, put aside their egos, and show greater empathy, which is an asset for the development of the medicinal plant center.

***Local wisdom variable*:** The results of the regression analysis show a significance value (Sig.) for the local wisdom variable (X_2) of $0.012 < \alpha = 0.05$. This concludes that H_0 is rejected and H_1 is accepted, which means that individually, local wisdom (X_2) has a significant effect on the development of the medicinal plant center (Y). The local wisdom variable (X_2) has a positive regression coefficient value of 0.0821 which means that every 1% increase in local wisdom will increase development of the medicinal plant center by 0.0821%. The local wisdom that is created, developed, and preserved in the community has become a guideline for people's lives (social principles, both written and unwritten). However, it is clear that every member of the community will

endeavor to abide by these principles. Local wisdom comprises knowledge, values, ethics and morals, norms, prohibitions, and sanctions. Good knowledge about medicinal plants, their benefits, and the parts of the plants that can be consumed will encourage better development of the medicinal plant center. The ethics, norms, prohibitions, and sanctions embedded in the minds of a community will shape their habits which in turn will support the development of a program (Rahayu et al., 2018), in this case the medicinal plant center, because people can do what they are supposed to do and steer clear of any prohibitions, and if any rules are broken, sanctions will be enforced.

***Social quality variable*:** The results of the regression analysis show that the significance value (Sig.) of the social quality variable (X_3) is $0.032 < \alpha = 0.05$. Thus, the H_0 is rejected and H_1 is accepted, which means that individually, social quality (X_3) has a significant effect on the development of the medicinal plant center (Y). The social quality variable (X_3) has a positive regression coefficient value of 0.0969 which means that a 1% increase in social quality will increase development of the medicinal plant center by 0.0969%. Social quality comprises economic security, social cohesion, social inclusion, and social empowerment. Economic security will encourage the development of the medicinal plant center because it will create income for the people and improve the local economy. In addition, with the covid-19 pandemic and the belief that herbal plants can improve stamina, the demand for medicinal plants will increase, as will their price. Social cohesion, according to Durkheim, is an indication that good mechanical and organic social solidarity has brought the community to the highest level or peak of social civilization. This will therefore support the development of the medicinal plant center because people have the ability to unite. Social inclusion will also support the development of the medicinal plant center because all individuals or community groups can participate in activities to develop the medicinal plant center. Social empowerment will support the development of the medicinal plant center because the individuals in the community can meet their own basic needs and resolve their social problems.

***Age variable*:** The results of the regression analysis produce a significance value (Sig.) for the age variable (X_4) of $0.004 < \alpha = 0.05$. This concludes that H_0 is rejected and H_1 is accepted, which means that individually, age (X_4) has a significant effect on the development of the medicinal plant center (Y). The age variable (X_4) has a positive regression coefficient value of 0.1343 which means that every 1% increase will increase the development of the medicinal plant center by 0.1343%. The more advanced a person's age, the greater the development of the medicinal plant center because older people are more psychologically mature, better at making decisions, and more mature in their thoughts and actions, so that the decisions they make in relation to the development of the medicinal plant center will be more carefully considered.

***Number of family members variable*:** The results of the regression analysis produce a significance value (Sig.) of $0.158 > \alpha = 0.05$ for the variable of number of family members (X_5) This concludes that H_0 is accepted and H_1 is rejected, which means that individually, the number of family members (X_5) does not have a significant effect on the development of the medicinal plant center (Y).

***Education variable*:** The results of the regression analysis also show that the significance value (Sig.) of the education variable (X_6) is $0.000 < \alpha = 0.05$. Thus, the H_0 is rejected and H_1 is accepted, which means that individually, education (X_6) has a significant effect on the development of the medicinal plant center (Y). The education variable (X_6) has a positive regression coefficient value of 8.669 which means that every 1% increase in education will increase the development of the medicinal plant center by 8.669 %. A higher education will encourage the development of the medicinal plant center because people with a higher education have better knowledge and insight, enabling them to make innovations in the cultivation of medicinal plants and to reach a broader market.

***Conclusion*:** The diversity of the medicinal plants that continue to grow in the area around Mount Lawu cannot be separated from the myths that still exist in the local community. The mythicizing of medicinal plants is one of the strategies used by the mountainside community to transfer local knowledge to the next generation. Some of the medicinal plants that are associated with these myths have been proven to contain chemical properties which promote good health. The results of the research show that social capital, local wisdom, social quality, age, and education all have a positive regression coefficient, which means that they have a significant effect on the development of the medicinal plant center.

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